

Amendments to the Claims:

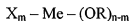
This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1.-20. (Cancelled)

21. (Currently Amended) A process for the preparation and the deposition of a vitreous film on a substrate comprising:

preparing a solution in an aprotic solvent selected from the group consisting of acetone, tetrahydrofuran and dioxane of at least one metal alkoxide corresponding to the formula



where Me is a metal selected from the group consisting of Group 3⁺, 4⁺ and 5⁺ of the Periodic Table of Elements; n is the valence of Me; X is R₁ or OR₁, R₁ is the same as or different from R, m is either zero or integer number equal to or lower than 3; R and R₁ are hydrocarbon radicals with a number of carbon atoms equal to or lower than 12;

adding a catalyst to the solution;

hydrolyzing the solution in the presence of the catalyst in a hydrolysis reaction by addition of water to maintain a molar ratio of H₂O/Me between 0.5 and 5 to obtain a clear hydrolysis reaction product;

removing alcohol formed during the hydrolysis reaction under reduced pressure and forming a sol in the presence of the aprotic solvent wherein an equal volume of the aprotic solvent replaces the alcohol removed;

depositing the hydrolysis reaction product in the form of a sol on the substrate;

optionally drying and stabilizing of the vitreous film.

22. -23. (Cancelled).

24. (Previously Presented)) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 wherein the alkoxide is selected from the group consisting of tetramethylorthosilicate, tetraethylorthosilicate, tetrapropylorthosilicate, tetrabutylorthosilicate, ethyltriethoxysilane, methyltrimethoxysilane, methyltriethoxysilane, and mixture thereof.

25. (Cancelled)

26. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 where the solution of the alkoxide or mixture of alkoxides in the aprotic solvent is from 30% to 60% by weight.

27. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 wherein hydrolyzing of the alkoxide is accomplished by adding a controlled quantity of water.

28. (Cancelled)

29. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 where the ratio H_2O/Me is from 1.5 to 4.

30. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 29 where the ratio H_2O/Me is from 2 to 3.

31. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 where hydrolyzing of the alkoxide is accomplished in presence of an acid catalyst selected from the group consisting of mineral and organic acids with K_a of 0.1 to 3.

32. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 31 where the reaction of hydrolyzing is in presence of an aqueous solution of HCl.

33. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 31 where the reaction of hydrolyzing is in presence of a quantity of acid such that a molar ratio alkoxide/acid is from 1/0.001 to 1/1.

34. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 33 where the molar ratio of alkoxide to acid is preferably from 1/0.1 to 1/0.01.

35. (Cancelled)

36. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 where the removal of the alcohol is made by subjecting the sol to partial and controlled desolventization.

37. (Cancelled)

38. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 further comprising depositing on substrate by knife coating, dip coating or spin-coating.

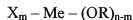
39. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 further comprising depositing on substrate by spin-coating.

40. (Previously Presented) The process for the preparation and deposition of a vitreous film onto a substrate according to Claim 21 where final drying is at a temperature of 20 to 500°C.

41. (Cancelled)

42. (New) A process for the preparation of a sol for the preparation of a vitreous film on a substrate comprising:

preparing a solution in an aprotic solvent selected from the group consisting of acetone, tetrahydrofuran and dioxane of at least one metal alkoxide corresponding to the formula



where Me is a metal selected from the group consisting of Group 3⁺, 4⁺ and 5⁺ of the Periodic Table of Elements; n is the valence of Me; X is R₁ or OR₁, R₁ is the same as or different from R, m is either zero or integer number equal to or lower than 3; R and R₁ are hydrocarbon radicals with a number of carbon atoms equal to or lower than 12;

adding a catalyst to the solution;

hydrolyzing the solution in the presence of the catalyst in a hydrolysis reaction by addition of water to maintain a molar ratio of H₂O/Me between 0.5 and 5 to obtain a clear hydrolysis reaction product;

removing alcohol formed during the hydrolysis reaction under reduced pressure and forming the sol in the aprotic solvent wherein an equal volume of the aprotic solvent replaces the alcohol removed.

43. (New) The process for the preparation of a sol according to Claim 42 wherein the alkoxide is selected from the group consisting of tetramethylorthosilicate, tetraethylorthosilicate, tetrapropylorthosilicate, tetrabutylorthosilicate, ethyltriethoxysilane, methyltrimethoxysilane, methyltriethoxysilane, and mixture thereof.

44. (New) The process for the preparation of a sol according to Claim 42 where the solution of the alkoxide or mixture of alkoxides in the aprotic solvent is from 30% to 60% by weight.

45. (New) The process for the preparation of a sol according to Claim 42 wherein hydrolyzing of the alkoxide is accomplished by adding a controlled quantity of water.

46. (New) The process for the preparation of a sol according to Claim 42 where the ratio H₂O/Me is from 1.5 to 4.

47. (New) The process for the preparation of a sol according to Claim 47 where the ratio H₂O/Me is from 2 to 3.

48. (New) The process for the preparation of a sol according to Claim 42 where hydrolyzing of the alkoxide is accomplished in presence of an acid catalyst selected from the group consisting of mineral and organic acids with K_a of 0.1 to 3.

49. (New) The process for the preparation of a sol according to Claim 49 where the reaction of hydrolyzing is in presence of an aqueous solution of HCl.

50. (New) The process for the preparation of a sol according to Claim 49 where the reaction of hydrolyzing is in presence of a quantity of acid such that a molar ratio alkoxide/acid is from 1/0.001 to 1/1.

51. (New) The process for the preparation of a sol according to Claim 51 where the molar ratio of alkoxide to acid is preferably from 1/0.1 to 1/0.01.

52. (New) The process for the preparation of a sol according to Claim 42 where the removal of the alcohol is made by subjecting the sol to partial and controlled desolventization.